

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A vascular insertion assembly, comprising:

an insertion sheath;

a dilator sized to fit inside the insertion sheath, the dilator having a distal end positionable distally beyond a distal end of the insertion sheath;

a first distal hole ~~located in~~ defined in a sidewall at the distal end of the dilator such that the first distal hole is positionable distally beyond the distal end of the insertion sheath, the first distal hole being open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath;

a first indicator located at a proximal end of the dilator, the first indicator being in fluid communication with the first distal hole;

a second distal hole ~~located in~~ defined in a sidewall at the distal end of the insertion sheath, the second distal hole being offset longitudinally and circumferentially from the first distal hole;

a second indicator located at a proximal end of the insertion sheath, the second indicator being in fluid communication with the second distal hole;

a third distal hole ~~located at~~ defined in the sidewall of one of the insertion sheath and dilator at a distal end of the vascular insertion assembly;

a third indicator located at the proximal end of the vascular insertion assembly, the third indicator being in fluid communication with the third distal hole.

2-3. (Canceled)

4. (Withdrawn – Previously Presented) The assembly according to claim 1, wherein the first distal hole and the second distal hole are offset from each other to accommodate an insertion angle of the assembly.

5-6. (Canceled)

7. (Withdrawn – Previously Presented) The assembly according to claim 1 wherein the first distal hole and the first indicator provide indication of proper insertion of the vascular insertion assembly into a vessel and the second distal hole and the second indicator provide indication of over insertion of the vascular insertion assembly into the vessel.

8-11. (Canceled)

12. (Withdrawn – Previously Presented) The assembly according to claim 12, wherein:

the third distal hole and the third indicator provide indication of an initial insertion of the insertion sheath into a vessel;

the first distal hole and the first indicator provide indication of proper insertion of the insertion sheath into the vessel; and

the second distal hole and the second indicator provide indication of over insertion of the insertion sheath into the vessel.

13. (Previously Presented) The assembly according to claim 1, wherein at least one of the first indicator or the second indicator is a hole defined in a sidewall of at least one of the dilator and the insertion sheath.

14. (Previously Presented) The assembly according to claim 1, further comprising:
a first lumen that provides the fluid communication between the first distal hole and the first indicator;
wherein the first lumen passes through the dilator.

15. (Previously Presented) The assembly according to claim 14, further comprising:
a second lumen that provides the fluid communication between the second distal hole and the second indicator;
wherein the second lumen passes through the dilator.

16. (Previously Presented) The assembly according to claim 14, further comprising a second lumen that provides the fluid communication between the second distal hole and the second indicator;

wherein the second lumen passes through the insertion sheath.

17-20. (Canceled)

21. (Previously Presented) The assembly according to claim 1, further comprising:
a lumen having a first flow path and a second flow path;
wherein the first flow path provides the fluid communication between the first distal hole and the first indicator; and

the second flow path provides the fluid communication between the second distal hole and the second indicator.

22. (Withdrawn – Previously Presented) The assembly according to claim 1, wherein at least one of the first indicator or the second indicator is a pressure gauge.

23. (Canceled)

24. (Withdrawn – Previously Presented) The assembly according to claim 1 further comprising:

a differential pressure gauge;

wherein the first distal hole is in fluid communication with a first input hole of the differential pressure gauge and the second distal hole is in fluid communication with a second input hole of the differential pressure gauge, such that the differential pressure gauge indicates when the vascular insertion assembly penetrates the vessel.

25. (Withdrawn) The assembly according to claim 24, wherein the differential pressure gauge is a ball, float gauge.

26-27. (Canceled)

28. (Currently Amended) A vascular insertion assembly, comprising:

an insertion sheath having a distal end and a proximate end;

a dilator having a distal end and a proximate end, the dilator being sized to fit in the insertion sheath, the distal end of the dilator positionable distally beyond the distal end of the insertion sheath;

a first distal hole ~~located in~~ defined in a sidewall at the distal end of the dilator such that the first distal hole is positionable distally beyond the distal end of the insertion sheath, the first distal hole being open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath;

a second distal hole ~~located in~~ defined in a sidewall at the distal end of the insertion sheath;

a third distal hole ~~located in~~ defined in the sidewall at the distal end of one of the dilator and insertion sheath, wherein the first, second and third distal holes are spaced part from each other in a lengthwise direction;

a first proximal hole located at a proximal end of the dilator, the first proximal hole being in fluid communication with the first distal hole;

a second proximal hole located at the proximal end of the insertion sheath, the second proximal hole being in fluid communication with the second distal hole via a flow path defined by the insertion sheath, the flow path being positioned radially inward of an outer surface of the insertion sheath;

a third proximal hole located at the proximal end of the one of the dilator and insertion sheath, the third proximal hole being in fluid communication with the third distal hole;

wherein the vascular insertion assembly is configured so that fluid flows out of the first proximal hole when the first distal hole enters a vessel, fluid flows out of the second proximal hole when the second distal hole enters the vessel, and fluid flows out of the third proximal hole when the third distal hole enters the vessel.

29-32. (Canceled)

33. (Withdrawn – Previously Presented) The assembly according to claim 28, wherein at least one of the combination of the first distal hole and the first proximal hole or the combination of the second distal hole and the second proximal hole is in fluid communication by way of a lumen that passes through the dilator.

34. (Withdrawn – Previously Presented) The assembly according to claim 28, wherein the first distal hole and the second distal hole are staggered.

35. (Withdrawn – Previously Presented) The assembly according to claim 28, further comprising:

a penetration gauge that includes an indicator, a first access hole, and a second access hole;

wherein the first access hole is in fluid communication with the first proximal hole and the second access hole is in fluid communication with the second proximal hole, such that the indicator provides indication of when the vascular insertion assembly penetrates the vessel.

36. (Withdrawn – Previously Presented) The assembly according to claim 28, wherein at least one of the combination of the first distal hole and the first proximal hole or the combination of the second distal hole and the second proximal hole is in fluid communication by way of a lumen that passes through the insertion sheath.

37. (Withdrawn – Previously Presented) The assembly according to claim 28, wherein the first distal hole and the first proximal hole are in fluid communication by way of a lumen that passes through the dilator and the second distal hole and the second proximal hole are in fluid communication by way of a lumen that passes through the insertion sheath.

38. (Withdrawn – Previously Presented) The assembly according to claim 28, wherein the first distal hole and the first proximal hole are in fluid communication by way of a lumen that passes through the insertion sheath and the second distal hole and the second proximal hole are in fluid communication by way of a lumen that passes through the insertion sheath.

39-44. (Canceled)

45. (Currently Amended) A vascular insertion assembly, comprising:

a distal end where a first distal hole, a second distal hole, and a third distal hole are located;

a proximal end where a first indicator, a second indicator, and a third ~~proximal hole~~ indicator are located;

an insertion sheath having a distal end, wherein the second distal hole is ~~located in~~ defined in a sidewall at the distal end of the insertion sheath;

a dilator sized to fit inside the insertion sheath, the dilator having a distal end positionable distally beyond a distal end of the insertion sheath, wherein the first distal hole is ~~located in~~ defined in a sidewall at the distal end of the dilator;

wherein the third distal ~~hole~~ hole is ~~located in~~ defined in the sidewall of the distal end of one of the dilator and insertion sheath;

wherein the first distal hole is positionable distally beyond the distal end of the insertion sheath;

wherein the first distal hole is in fluid communication with the first indicator, the second distal hole is in fluid communication with the second indicator, and the third distal hole is in fluid communication with the third indicator;

wherein the second distal hole is spaced apart from the first distal hole in a proximal direction;

wherein the second distal hole is offset circumferentially from the first distal hole;

wherein the first indicator is located in the dilator, the second indicator is located in the insertion sheath, and the third indicator is located in one of the dilator and insertion sheath;

wherein the first distal hole is open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath.

46. (Currently Amended) A vascular insertion assembly, comprising:

a distal end where a first distal hole, a second distal hole, and a third distal hole are located;

a proximal end where a first indicator, a second indicator, and a third indicator are located;

an insertion sheath having a distal end, wherein the second distal hole is ~~located in~~ defined in a sidewall at the distal end of the insertion sheath;

a dilator sized to fit inside the insertion sheath, the dilator having a distal end positionable distally beyond a distal end of the insertion sheath, wherein the first distal hole is ~~located in~~ defined in a sidewall at the distal end of the dilator;

wherein the third distal hole is ~~located in~~ defined in the sidewall of the distal end of one of the dilator and insertion sheath;

wherein the first distal hole is positionable distally beyond the distal end of the insertion sheath;

wherein the first distal hole is in fluid communication with the first indicator, the second distal hole is in fluid communication with the second indicator via a flow path defined by the insertion sheath, the flow path being positioned radially inward of an outer surface of the insertion sheath, and the third distal hole is in fluid communication with the third indicator;

wherein the first indicator is located in the dilator, the second indicator is located in the insertion sheath, and the third indicator is located in one of the dilator and insertion sheath;

wherein the first distal hole is open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath;

wherein the first indicator provides an indication that the vascular insertion assembly is at one depth in a vessel, the second indicator provides an indication that the vascular insertion assembly is at another depth in the vessel, and the third indicator provides an indication that the vascular insertion assembly is at another depth in the vessel.

47. (Currently Amended) A vascular insertion assembly, comprising:

an insertion sheath having a distal end and a proximate end;

a dilator sized to fit inside the insertion sheath, the dilator having a distal end and a proximate end, the distal end of the dilator positionable distally beyond the distal end of the insertion sheath;

a first inlet port ~~located in~~ defined in a sidewall at the distal end of the dilator such that the first inlet port is positionable distally beyond the distal end of the insertion sheath, the first inlet port being open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath;

a first outlet port located at a proximal end of the dilator, the first outlet port being in fluid communication with the first inlet port so that when the first inlet port penetrates a vessel the first outlet port indicates an initial penetration of the vascular insertion assembly into the vessel;

a second inlet port in defined in a sidewall at the distal end of the insertion sheath, the second inlet port being offset from the first inlet port;

a second outlet port located at the proximal end of the insertion sheath, the second outlet port being in fluid communication with the second inlet port so that when the second inlet port penetrates the vessel the second outlet port indicates over insertion of the vascular insertion assembly into the vessel;

a third inlet port in defined in the sidewall of the distal end of one of the dilator and insertion sheath, the third inlet port being offset from the first and second inlet ports;

a third outlet port located at the proximal end of one of the dilator and insertion sheath, the third outlet port being in fluid communication with the third inlet port so that when the third inlet port penetrates the vessel the third outlet port indicates proper insertion of the vascular insertion assembly into the vessel.

48. (Currently Amended) A vascular insertion assembly comprising:

a distal end where a first distal hole, a second distal hole, and an over insertion hole are located;

a proximal end where a first indicator, a second indicator, and an over insertion indicator are located;

an insertion sheath, wherein the over insertion hole is located in the insertion sheath;

a dilator sized to fit inside the insertion sheath, the dilator having a distal end positionable distally beyond a distal end of the insertion sheath;

wherein the first distal hole is ~~located in~~ defined in a sidewall at the distal end of the dilator such that the first distal hole is positionable distally beyond the distal end of the insertion sheath, the first distal hole being open for fluid flow only after being positioned distally beyond the distal end of the insertion sheath;

wherein the second distal hole is ~~located in~~ defined in a sidewall at the distal end of one of the dilator and insertion sheath;

wherein the over insertion hole is defined in the sidewall of the distal end of one of the dilator and insertion sheath;

wherein the vascular insertion assembly is configured so that the first distal hole provides an indication that the vascular insertion assembly has initially penetrated a vessel, the second distal hole provides an indication that the vascular insertion assembly has penetrated the vessel a proper distance, and the over insertion hole provides an indication that the vascular insertion assembly has penetrated too far into the vessel;

wherein the first indicator is located in the dilator, the second indicator is located in one of the dilator and insertion sheath, and the over insertion indicator is located in the insertion sheath;

wherein the over insertion hole and the over insertion indicator are in fluid communication via a flow path defined by the insertion sheath, the flow path being positioned radially inward of an outer surface of the insertion sheath.

49. (Previously Presented) The assembly according to claim 48 wherein the indication provided by the first distal hole, the second distal hole, and the over insertion hole is at a proximal end of the vascular insertion assembly.

50-51. (Canceled)

52. (Previously Presented) The assembly according to claim 45 wherein the first indicator includes a first proximal hole and the second indicator includes a second proximal hole.

53. (Previously Presented) The assembly according to claim 46 wherein the second indicator provides an indication that the vascular insertion assembly has been over inserted into the vessel.

54. (Previously Presented) The assembly according to claim 46 wherein the first indicator includes a first proximal hole and the second indicator includes a second proximal hole.

55-56. (Canceled)

57. (Previously Presented) The assembly according to claim 47, wherein at least one of the combination of the first inlet port and the first outlet port or the combination of the second inlet port and the second outlet port is in fluid communication by way of a lumen that passes through the dilator.

58. (Previously Presented) The assembly according to claim 47, wherein at least one of the combination of the first inlet port and the first outlet port or the combination of the second inlet port and the second outlet port is in fluid communication by way of a lumen that passes through the insertion sheath.

59. (Previously Presented) The assembly according to claim 47, wherein the first inlet port and the first outlet port are in fluid communication by way of a lumen that passes through the dilator and the second inlet port and the second outlet port are in fluid communication by way of a lumen that passes through the insertion sheath.

60. (Previously Presented) The assembly according to claim 47, wherein the first inlet port and the first outlet port are in fluid communication by way of a lumen that passes through the insertion sheath and the second inlet port and the second outlet port are in fluid communication by way of a lumen that passes through the insertion sheath.

61. (New) The assembly of claim 1, wherein the third distal hole extends laterally through the sidewall of one of the dilator or insertion sheath.